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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/539,428

01/30/2006

Marko Ramisch

P/4712-4

1088

2352 7590 03/18/2008
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EXAMINER

BELL, BRUCE F

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

03/18/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/539,428	Applicant(s) RAMISCH ET AL.	
	Examiner Bruce F. Bell	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 20-34 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/20/05</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (d) BRIEF SUMMARY OF THE INVENTION.
- (e) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (f) DETAILED DESCRIPTION OF THE INVENTION.
- (g) CLAIM OR CLAIMS (commencing on a separate sheet).
- (h) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

Applicant is requested to place the appropriate title headings shown above prior to each section of their instant specification.

1. The disclosure is objected to because of the following informalities:

References to the claims in the specification need to be removed, since the reference to a claim in the specification is not permitted, since claims are subject to change during prosecution of the application. Applicant is permitted to include the pertinent information found in the originally submitted claims into the specification in those places where the claims were mentioned.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 20-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Clark et al (6086643).

Clark et al disclose an electrochemical cell having a plurality of electrochemical components which components are joined together in a stack and are providing a first component formed from a deformable polymeric material with at least one substantially continuous groove comprising a female opening having a width and depth and providing a second component with at least one substantially continuous upstand having a width and height wherein the first and second components are pressed together in order to provide an integral seal between the upstand on the second component and the opening in the first component with the seal between the parts being provided by sealing engagement of the sides of the upstand with the sides of the openings and joining a plurality of first and second components together to form a stack. See abstract and col. 5, lines 16-26. The bipolar electrodes are separated one from the other by a cation exchange membrane and are each joined to an insulating flow frame 10. Each insulating flow frame is joined to the next frame in the stack by a seal between the parts being formed as show in Figures 1A and 1B. The upstands on the flow frames extend

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continuously or substantially continuously around the frames and these upstands are pressed into corresponding continuous or substantially continuous grooves formed in the adjacent flow frame. The electrodes are sealed to the insulating flow frames. The device has end plates that are made in such a manner as to be able to seal the top flow frame in the stack and the bottom flow frame in the stack respectively to maintain the integrity of the internally pressurized cell. See col. 5, lines 33-54.

The prior art of Clark et al anticipates the applicants instant invention as set forth in the instant claims. Since the cell is pressurized with top and bottom end plates with individual cells inbetween and the flow frames are shown to have upstands and openings in respective flow frames to interconnect the frames so that they are mated together in a press fit and sealing configuration, it appears that applicants instant invention as set forth has been met. Applicant will probably argue that the Clark et al patent is directed to a redox flow battery, however, applicants are claiming a structure and since the structure of Clark et al has the ability to form the structure as instantly recited, it appears that the subject matter of Clark et al inherently is capable of performing the such function as instantly being claimed, unless applicant's can set forth a feature in the claims that would not be in the structure of Clark et al. A structure as recited only has to be capable of performing a function in order to meet the claims as recited. Further, the dependent limitations as set forth in applicants instant claims with respect to rigid and elastic appear to have been met by the prior art of Clark et al since the upstands appear to be inherently rigid while the openings in the flow frames appear to be elastic in nature since the opening is shown to deform and is made of a

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thermoplastic material. It further appears that each flow frame has an electrode.

Thermoplastics are known for their stable nature and therefore it appears that the upstands would inherently have this feature. Thermoplastics are also known to be electrically insulating in nature and therefore this aspect would be inherent in the materials used in Clark et al. The stack ends are further shown to have electrical connections connected to the end plates of the plurality of cells. Therefore, the prior art of Clark et al anticipates the applicants' instant invention as instantly claimed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 20-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eng (4342460) in combination with McCarter et al (5480743).

Eng discloses a filter press electrolytic cell assembly having materials that are used for sealing the cell contents between individual frames. See abstract. The patent sets forth the assembly as having an anode compartment frame 11 and a cathode compartment frame 13. See col. 2, lines 55-60. A membrane 21 is positioned between frames 11 and 13 and are securely held in place by opposing gaskets 25, mounted in recesses in both the anode and cathode compartment frame members 11 and 13. Compressive forces are applied to the anode and cathode frames forcing them together, so that crown portions 35 come into contact with the opposite sides of

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membrane 21 and are compressed into the grooves or recess in the frame members, thus occupying the void spaces created by the cavities 37. The membrane 21 may also be secured to either the anode or cathode frames. The gasket material is one of neoprene, natural rubber or other synthetic or organic elastomeric material such as ethylene propylene rubber such as EPDM rubber. See col. 4, lines 25-52.

Eng does not disclose projecting parts or recess parts for locking the adjacent cell frames in place and/or for sealing the adjacent cell frames.

McCarter et al discloses a bipolar compression cell having elastomeric frames that have a protrusion on one side of the frame and a recess on the other side of the frame which is used to enable the bipolar cells to be stacked in a side by side arrangement wherein the elastomeric frames when compressed allow for sealing between each of the frames of the bipolar cells. The wedge projection and wedge groove on opposite sides of the frame when compressed together, are elastic and resilient, and a gasket seal is formed around each frame member in this side by side array, preventing electrolyte from flowing from one cell to another. See col. 4, lines 15-23.

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the instant invention was made because even though the prior art of Eng does not disclose that the sealing of adjacent cell frames by way of projecting parts and recess parts, the prior art of McCarter shows that in bipolar compression cells that this type of seal is known to be used to prevent water or electrolyte from leaking between adjacent cells, therefore, one having ordinary skill in the art would be

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motivated to take the seal of McCarter et al and used this seal between frames in the prior art of Eng to enable better sealing between the frames to eliminate fluid leakage in the cell stack. The recitation in the instant claims with respect to the limitations of rigid and elastic appear to have been met through the use of McCarter et al since it appears that these elastomeric frames are both rigid and elastic since there has been no definition or examples of what the definition of rigid and elastic are in applicants instant specification. It appears that an elastomeric frame can be rigid and yet be elastic at the same time, therefore, it appears that both physical features are found in the McCarter et al frame being used in a bipolar compression cell. Therefore, the prior art of Eng in combination with McCarter et al renders the applicants instant invention as obvious for the reasons set forth above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BFB
March 12, 2008

/Bruce F. Bell/
Primary Examiner, Art Unit 1795